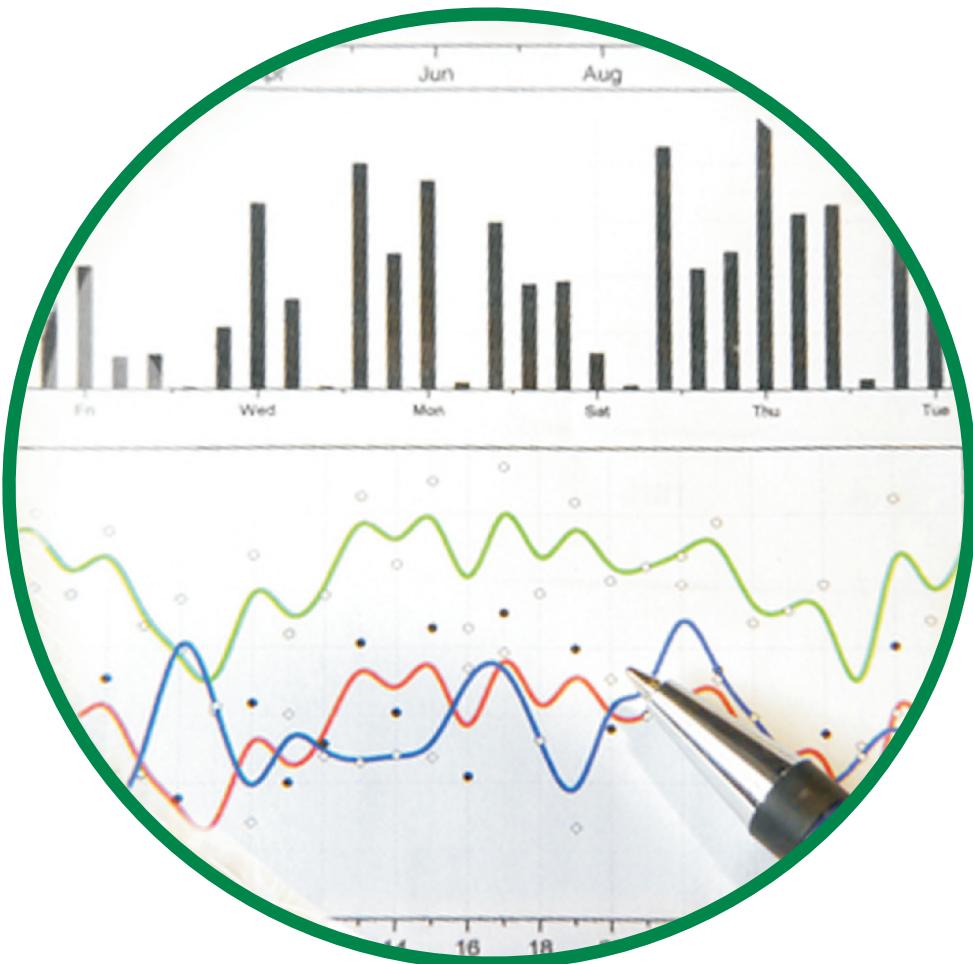


Statistical Designs and Analysis for Agricultural Field Experiments



V.Katyal | D.M.Hegde

Statistical Designs and Analysis for Agricultural Field Experiments

By

V. KATYAL

Principal Scientist (Ag.Stat.) Retd.

Central Jute and Allied Fibers Research Institute, West Bengal

Central Soil Salinity Research Institute, Karnal, Haryana

Project Directorate on Cropping Systems Research, Meerut, Uttar Pradesh
(Indian Council of Agricultural Research)

India

D.M. Hegde

Project Director, Retd.

Directorate of Oilseed Research, Rajendarnagar, Hyderabad, Andhra Pradesh

(Indian Council of Agricultural Research)

India



NEW INDIA PUBLISHING AGENCY

New Delhi – 110 034



NEW INDIA PUBLISHING AGENCY

101, Vikas Surya Plaza, CU Block, LSC Market
Pitam Pura, New Delhi 110 034, India
Phone: + 91 (11)27 34 17 17 Fax: + 91(11) 27 34 16 16
Email: info@nipabooks.com
Web: www.nipabooks.com

Feedback at feedbacks@nipabooks.com

© Authors, 2013

ISBN: 978-93-81450-84-0

All rights reserved, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the publisher or the copyright holder.

This book contains information obtained from authentic and highly regarded sources. Reasonable efforts have been made to publish reliable data and information, but the author/s, editor/s and publisher cannot assume responsibility for the validity of all materials or the consequences of their use. The author/s, editor/s and publisher have attempted to trace and acknowledge the copyright holders of all material reproduced in this publication and apologize to copyright holders if permission and acknowledgements to publish in this form have not been taken. If any copyright material has not been acknowledged please write and let us know so we may rectify it, in subsequent reprints.

Trademark notice: Presentations, logos (the way they are written/presented) in this book are under the trademarks of the publisher and hence, if copied/resembled the copier will be prosecuted under the law.

Composed and Designed by NIPA

Contents

<i>Preface</i>	<i>v</i>
1. Some Statistical Results and Completely Randomised Design (CRD)	1
2. Randomised Complete Block Design (RCBD)	15
3. Factorial Experiments	29
4. Split-Plot Design	63
5. Split-Split Plot Design	77
6. Latin Square Design (LSD)	87
7. Incomplete Block Designs for Plant Breeding Trials	97
8. Transformation of Data	119
9. Series of Experiments	125
10. Analysis of Co-Variance	135
11. Long Term Experiments	145
<i>References</i>	151

Statistical Designs and Analysis for Agricultural Field Experiments

Readership: Meant for students of all levels in the field of statistics, economics and business management.

The book is written in easy to understand language, in short paragraphs and is fully supported by adequate examples. The book consists of 11 chapters.

- o Chapter-1 is related to statistical results and completely randomized design for agricultural field experiments.
- o Chapter-2 is devoted to randomized block design used for local control, and replication in agricultural experiments.
- o Chapter-3 is devoted to factorial experiments in randomized block design involving two or more factors.
- o Chapter-4 involves split-plot design and strip plot design.
- o Chapter-5 illustrates split-split plot design with an example.
- o Chapter-6 deals with Latin Square design.
- o Chapter-7 touches incomplete plot design meant for plant breeding trials.
- o Chapter-8 deals with transformation of data which is applied when the given data is not normally distributed.
- o Chapter-9 deals with series of experiments with same set of treatments over different seasons or different places.
- o Chapter-10 deals with Analysis of co-variance technique.
- o Chapter-11 involves long-term experiments where same set of treatments are continued over the same site without re-randomization.

The book in sense is exhaustive and complete by itself.

V. KATYAL: *Principal Scientist (Ag.Stat.) Retd., Central Jute and Allied Fibers Research Institute, West Bengal, Central Soil Salinity Research Institute Karnal, Haryana, Project Directorate on Cropping Systems Research Meerut, Uttar Pradesh, (Indian Council of Agricultural Research), India*

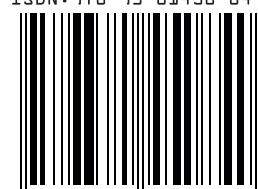
D.M. HEGDE: *Project Director, Retd., Directorate of Oilseed Research, Rajendarnagar Hyderabad, Andhra Pradesh, (Indian Council of Agricultural Research) India*



NEW INDIA PUBLISHING AGENCY

101, Vikas Surya Plaza, CU Block, L.S.C. Market,
Pitam Pura, New Delhi - 110 034 (India)
Ph: +91-11-27 34 17 17, Fax: +91-11-27 34 16 16
Email: info@nipabooks.com
Website: www.nipabooks.com

ISBN: 978-93-81450-84-0



9 789381 450840